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## **Life satisfaction in a survey of Italian households**

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### **Abstract**

This paper explores life satisfaction in Italy by using the ISAE survey on Italian households' budget, which has been extended to the specific question on this aspect in the May 2008 wave. Our main new contributions to the existing literature regard the role of the characterisation of the family structure, the type of work, the place of living, the working time in relation to life satisfaction, but above all, the stressing role of perceived income, of past income changes, affordability of expenses for monthly bills, and borrowing. Actual income clearly emerges as an insufficient indicator of the households' economic conditions which are relevant for their self-reported life satisfaction.

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## **1. Introduction**

The economic research on people's life satisfaction and happiness, as based on self-reported data, has developed rapidly in recent years by raising interesting questions. It may be said that this type of research is born from a paradox, namely the Easterlin paradox, which states that people's happiness does not grow with income over time, at least in the advanced countries, although it does so across countries, and across households within countries (Easterlin 1974).

This paper explores a new issue as a case study, since it focuses on Italy that has recently emerged as an interesting case. As Blanchflower and Oswald (2008a) have already observed, Italians exhibit the lowest level of well-being in the EU-15, not only on self-reported basis, but also on the objective basis of psychological distress. This finding, which refers to 2001, has recently even worsened: in fact, according to Eurobarometer Italian people who report themselves very satisfied or fairly satisfied with life dropped from 81% in 2001 to 64% in 2008, placing Italy in the rank of life satisfaction below the EU-27 average, which includes fairly heterogeneous countries with respect to both economic and social conditions. Istat, the Italian official statistical source, shows a similar decline in the economic domain of life satisfaction, but some decline also appears in social and health domains (Istat 2007). Nevertheless, real per-capita GDP in Italy ranks above the EU-27 average, and it is growing, but at a slow average rate of 1% in the last decade.

A research on the Italian case of why life satisfaction performs so badly is thus needed. This paper explores the issue by using new data, which have been collected for the first time in May 2008. A question on life satisfaction has in fact been introduced in the questionnaire of the ISAE Consumers Opinion Survey, which already includes questions on the household's and general economic situation, besides socio-demographic questions. More specifically, interesting questions regard households' savings or borrowings, difficulties in meeting basic expenses, desired income to live without deprivations or luxuries, along with questions on the composition of the family, specific occupation, and job insecurity. A further new question has been introduced asking for the preference in the trade-off between income and leisure.

Results should be regarded as provisional, since, henceforth, the Survey in this extended form is conducted twice a year with an effective sample of 2,000 interviews each time, so that more detailed analysis will be possible in the near future.

The organisation of the paper is as follow: section 2 introduces the ISAE Consumers Opinion Survey, and its recent extension with the new questions; section 3 presents the descriptive analysis of the relevant data; section 4 is devoted to econometric estimates; while section 5 concludes.

## **2. The ISAE Consumers Opinion Survey**

### *A short methodological introduction*

Since 1973, ISAE has been conducting a monthly survey on consumers' opinion in the framework of a project harmonized by the European Commission. The survey questionnaire is divided in two main sections, containing, respectively, structural and cyclical questions on the economic and personal situation of the consumer. Structural questions gather information on gender, age, education, zone of residence, working status and family structure of the respondents; the cyclical part of the questionnaire includes 15 qualitative, multiple-choice questions, concerning respectively opinions on the general and personal economic situation and on savings and purchasing

intentions<sup>1</sup>. Cyclical questions generally allow five possible answers, ranging from strongly positive to strongly negative; survey results are quantified calculating sample frequencies and their relative “balance”, i.e. the difference among positive and negative replies, assigning double weight to extreme (positive and negative) answers.

The survey is carried out via telephone combined with Computer Assisted Telephone Interviewing (CATI) System; it is based on a monthly sample of 2000 Italian consumers, changing each month, for a total of 24,000 persons interviewed per year. The sample is extracted from the public telephone book registers and selected on the basis of a two-stage technique: in the first step, it is stratified according to the zone of residence and the size of municipalities; the second step is based on the selection of a specific consumer within the household selected in the first step. This selection is based on quota sampling according to gender (48.5% males, 51.5% females)<sup>2</sup>. For the aggregation of individual replies, ISAE has recently proposed a double-weighting system based on probability and post-stratification weights<sup>3</sup>. More specifically, probability weights are the inverse of the selection probability; they are used to correct for possible selection bias deriving from unequal selection probabilities, linked to the nature of the list of reference and the size of the family selected. On the other hand, post stratification weights aim at correcting for possible representativeness problems deriving, for instance, from the fact that unemployed and retired people are easier to contact than employees or self-employed. To correct for this kind of bias, ISAE uses an ex-post calibration method based on auxiliary information derived from official structural population statistics: more specifically, ISAE uses auxiliary information about size of municipality, geographic region, education, type of occupation and age of the respondents.

#### *The questionnaire on life satisfaction*

In May, 2008 ISAE and the Economics Department at the University of Cassino introduced two new questions in the questionnaire, aimed at measuring respectively the consumer attitude towards working hours and the degree of life satisfaction. More specifically, the first question asks to choose among three possibilities regarding the preference among income and leisure; in this respect, the consumer has to indicate whether she prefers:

- To increase working hours and income
- To stabilize at their current level both working hours and income
- To decrease working hours and income

The second question concerns the level of satisfaction with respect to both personal and professional life; the consumer has to choose among five possible answers, alternatively declaring to be:

- Extremely dissatisfied
- Dissatisfied
- Neither dissatisfied nor satisfied
- Satisfied
- Extremely satisfied

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<sup>1</sup> For the complete questionnaire, see the DG Ecfm website at:

[http://europe.eu.int/economy\\_finance/indicators/business\\_consumers\\_surveys/userguide\\_en.pdf](http://europe.eu.int/economy_finance/indicators/business_consumers_surveys/userguide_en.pdf).

<sup>2</sup> With quota sampling, response rates are always equal to 100%: non responses lead to replacement in the sample until the quota is achieved. In the case of the ISAE survey, in order to achieve the goal of 24,000 interviews each year a total of 120, 000 consumers are extracted from the telephone registers according to the stratification outlined above.

<sup>3</sup> See also Malgarini and Margani (2005) and Fullone, Gamba, Giovannini and Malgarini (2008).

The question is similar to those administrated in a number of international surveys aiming at measuring the perception on subjective well being<sup>4</sup>; more sophisticated approaches allow for multi-dimensional questions, asking about the degree of satisfaction on particular aspects of life<sup>5</sup>. Moreover, Kahneman and others (2004) outline that traditional subjective well being measures like those proposed by the more common international surveys may be biased by factors linked to difficulties in correctly integrating utility over time and by the general framework according to which the interviews are realised. In fact, subjective perceptions may be particularly influenced by recent events, whilst the particular structure of the questionnaire (in our case, the fact that evaluation on subjective well being is asked after a number of questions mainly concerned with economic aspects of life) may also bias the results. In order to reduce the bias, Kahneman and others (2004) propose two possible alternatives, the Experience Sampling Methods (ESM) and the Day Reconstruction Method (DRM). ESM-based surveys ask the respondents to provide answers on their immediate satisfaction about specific normal-life events during the day, while according to the DRM approach individuals are asked to keep a “diary” of the main events of the day before the interview, asking an evaluation on the level of satisfaction associated with these events. Albeit being more reliable, the main disadvantage of these methods is that they are far more complicated than the traditional direct method used in international surveys and adopted also in the ISAE-University of Cassino survey. Moreover, biases linked to the difficulty of properly recalling past events and to the effect of other questions in the questionnaire are likely to be reduced in sufficiently large and representative sample, as the one used in our survey; furthermore, the inclusion of the two questions in the standard ISAE questionnaire allows to control for the effect of a number of factors possibly influencing life satisfaction, including socio-demographic characteristics of the consumer and her own perception about the economic situation of the household and of the country in general.

### 3. The descriptive analysis

#### *Self-reported satisfaction*

Our dependent variable is the level of self-reported satisfaction with life, distributed as in figure 1.

From now on we will label this variable SRS or Self-Reported Satisfaction. The chart in Figure 1 reports our results<sup>6</sup>: the modal class is that of satisfaction, with small frequencies in the tails: 3% of people feel extremely dissatisfied, and about 5% extremely satisfied. The mean value is 3.37, on a scale which goes from 1 (extremely dissatisfied) to 5 (extremely satisfied).

The distribution of SRS cannot be easily compared with other studies because of the different scales used. However, the great concentration around the central classes, and the negative skewness of the distribution are common, and confirm another study on the Italian case (Scoppa and Ponzio 2008).

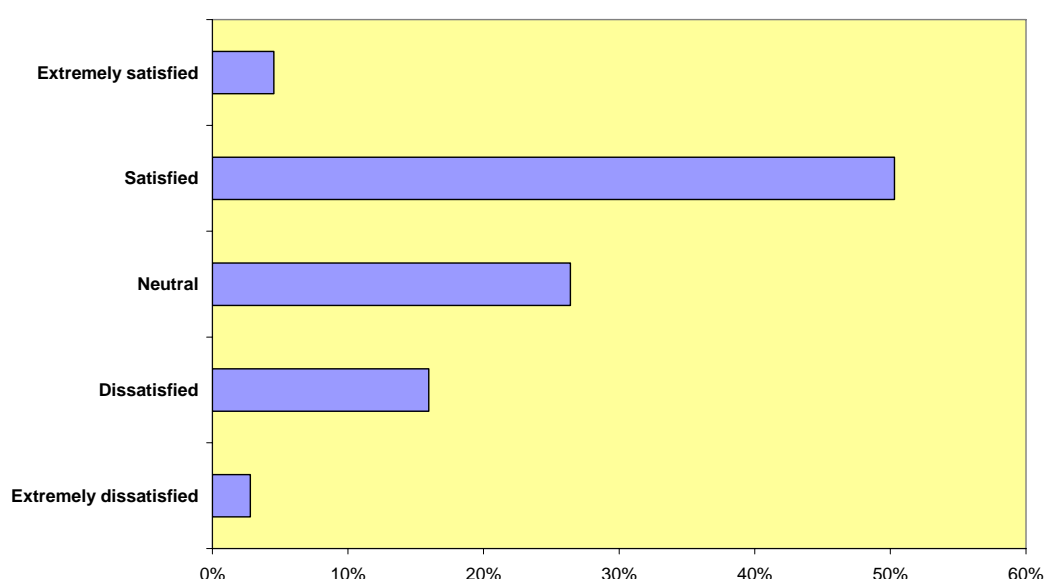
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<sup>4</sup> See for instance the World Value Survey (<http://www.worldvaluessurvey.org>), the European Social Survey (<http://www.europeansocialsurvey.org>) and the Eurobarometer survey ([http://ec.europa.eu/public\\_opinion](http://ec.europa.eu/public_opinion)).

<sup>5</sup> See for instance the PANAS (Positive and Negative Affect Schedule) or the SWLS (Satisfaction with Life Scale) approaches, respectively proposed in Watson, Clark and Tellegen (1988) and Diener, Emmons, Larsen and Griffin (1985).

<sup>6</sup> We use a stratified sample which turns out to be biased towards older people. All descriptive statistics are weighted, so to be representative for the population as a whole.

Figure 1. Self-perceived satisfaction with life (SRS)



### *Our sample variables*

The ISAE sample we adopt is designed to capture households sentiment towards the general economic situation of the country and that of the household. Several variables which are assumed to be relevant for perceived well-being, such as the social context, or social networks, are therefore not available, as survey feasibility limited the number of questions we could introduce. Moreover, some of the questions refer to the household, rather than the individual, while our question on perceived well-being is addressed to the individual<sup>7</sup>. A detailed analysis of variables characteristics is therefore in order.

### *Socio-demographic variables*

- Gender of respondent, coded<sup>8</sup> as MALE (=1 if male). Males seem to be more satisfied than females, as confirmed by a simple test of hypothesis of equality in the means of the two groups.
- Age of respondent, classified in 7 classes. Since age classes do not have the same width, our AGE variable takes the mean value for each class, instead of the class number. Self-reported satisfaction is highest among people in their 40s, and lowest among older people, although testing among means in different classes does not always support significant changes across groups. This result differs from the U-pattern of SRS over the life-cycle, as found in the international literature, also for the Italian case (Dolan et al. 2008; Scoppa and Ponzio 2008; Ferrante 2009). However, this should be confirmed in the multivariate analysis below.
- Number of persons in the household. The largest share (30.9%) of household is made up of a couple with no children, followed by a couple with two children (21.9%), a couple with one

<sup>7</sup> The survey asks personal information about socio-demographic characteristics of the respondent; moreover it asks the consumer opinion on the economic situation of the country, inflation, and her intention to buy durable goods; on the other hand, the respondent is asked to report about the economic situation of the household, his savings intention and the family budget.

<sup>8</sup> A complete list of variables names and description is available in the Appendix.

child (18.2%) and singles (13.2%). Descriptive statistics show that having children increase reported life satisfaction against being single or married with no children<sup>9</sup>.

- Number of persons above 65 in the household;
- Number of kids aged 14 or less;
- Number of children aged between 14 and 18;
- Number of children aged 18 or more

The variables above allow us to group households in different groups, which have been chosen to be large enough for testing whether self-reported satisfaction is indeed dependent on characteristics of the family. This analysis is new with respect to the international studies, since the usual categories only refer to the familiar status of the respondents, i.e. mainly whether they are married, separated, living as married, divorced, widowed, or singles (e.g. Blanchflower and Oswald, 2004).

Given the over-representation of older people in our sample, this group is split into different sub-groups, while the same detail cannot be achieved for other age groups. We have:

- individuals living alone, aged 64 or more (7.6% of sample);
- singles, aged less than 64 (5.7% of sample);
- couple with no children, both aged 64 or more (12.9% of sample);
- couple with no children, with one individual aged 64 or more (6.5% of sample);
- couple with no children, both aged less than 64 (11.6% of sample);
- single parents (3.9% of sample);
- couple with one child, with parents of any age (18.3% of sample);
- couple with two children (21.9% of sample);
- other (11.8% of sample). This last group includes a couple with two children and maybe grandparents; couples with more than two children, etc.

Not surprisingly, self-reported satisfaction varies markedly across groups, as reported in the chart in Figure 2. Being alone, in particular, seems to imply a significant reduction in SRS.

Survey respondents are asked to specify their relation to the “head of the household”, which in Italy is identified by whomever has registered the household for municipality records. Somewhat unexpectedly, respondents who are “head of household” (53% of sample) report a SRS score significantly lower than their partners (36% of sample).

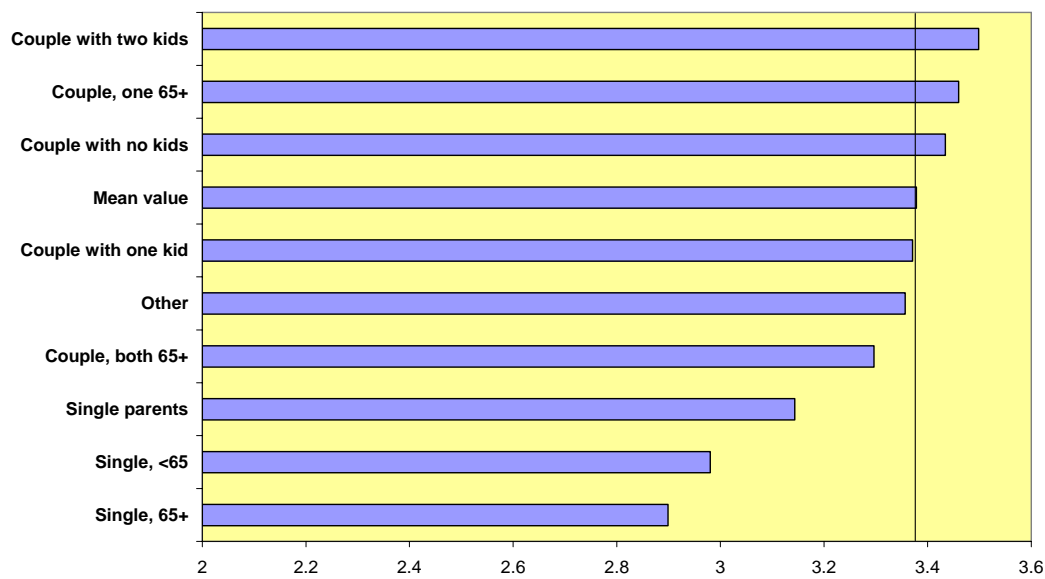
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<sup>9</sup> Families with more than three children are not numerous enough to compute valid tests, but reported happiness is lower in households with four children, with respect to household with three children or less.



Figure 2.

SRS by family type



### *Education and position at work*

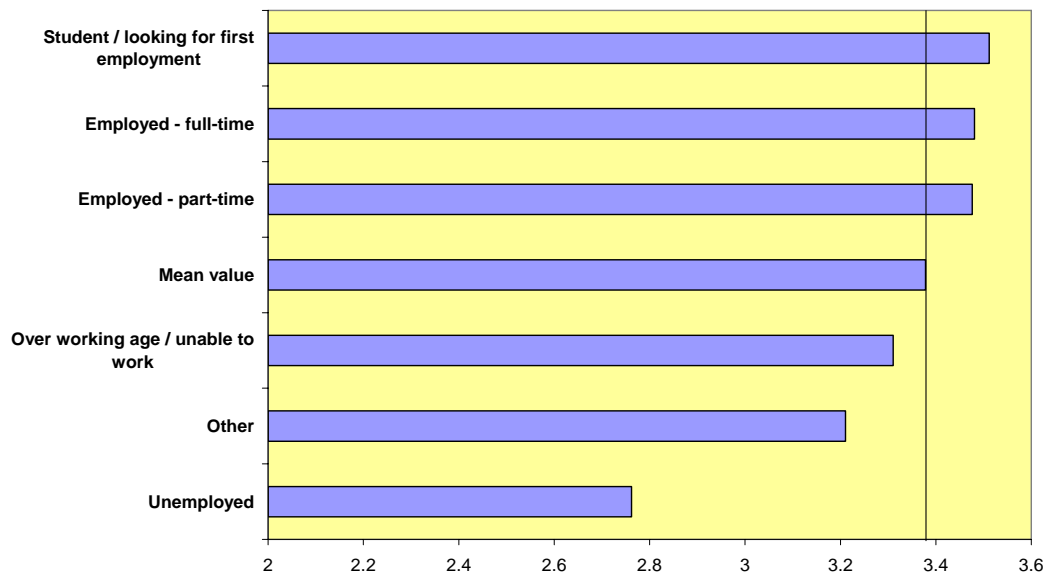
This group of variables refers to whomever responds to the survey: he or she is required to be 18 or older. In most cases it is the head of the family (53%) or his/her partner (36%).

Education is measured in 5 groups, from highest to lowest, which is a reverse scale than the usual one. It is strongly correlated with income, as expected.

Employment position is classified in 7 groups, and the average “happiness score” for each group is reported in the next chart. Being out of the labour market seems to have a strong impact on SRS: this is very clear for the unemployed (1.8% of our sample), and also evident for old or disabled people (34% of sample) and for the “other” group which includes housewives (21.4% of sample). Only 2 people classified themselves as “Rentiers”, and therefore the size of this group is too small to allow for testing and has been merged to the “Others” group. Students (3.2% of sample) and part-time workers (5.7% of sample) self-reported satisfaction is not significantly different from the overall sample mean, although SRS for students is above average when the sample is weighted.

Figure 3

SRS by employment status

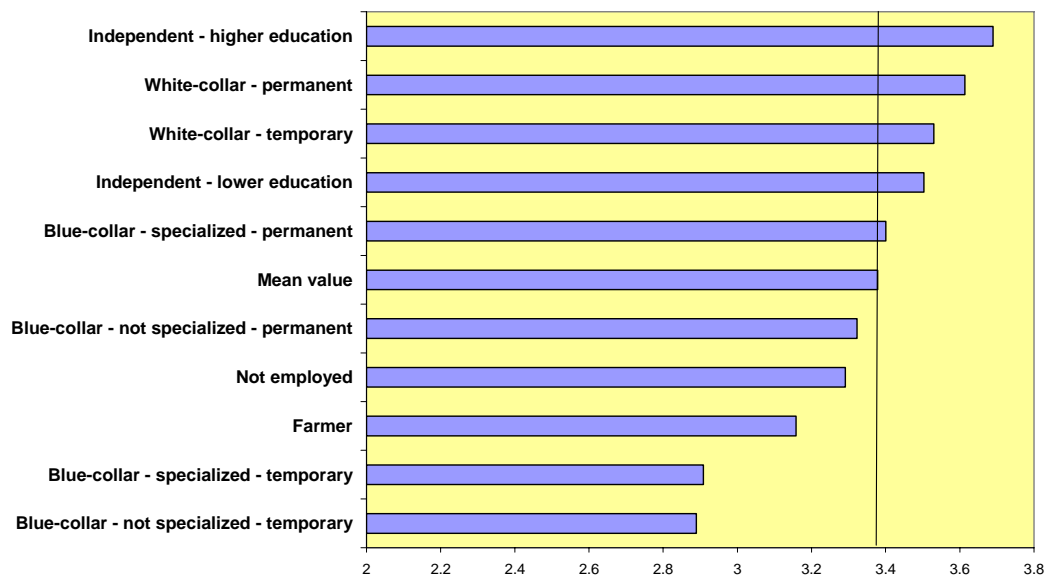


Among those who are employed, the survey distinguishes among five categories: non-specialized blue-collar (12%); specialized blue-collar (13%); white-collar (36%); independent (8%); farmer (7%). These categories are very broadly defined, and we have used an additional question from the survey, e.g. whether their contract is permanent or not, to try to distinguish between those who have a secure job and those whose job is at risk. Also this grouping is new with respect to the international studies, since the usual categories only refer to much broader categories, such as unemployed, self-employed, retired, keeping home, students (e.g. Di Tella and MacCulloch, 2007).

Perceived satisfaction by work type is summarized in the chart in Figure 4.

Figure 4

SRS by work type



A possible shortcoming of the classification in the survey is that the “independent” group does not distinguish between professionals (lawyers, etc.) and other type of jobs which are expanding rapidly, where the worker is classified as “independent consultant” but she is actually performing some low profile task with a temporary contract with a firm. To try to separate these two groups we split independent workers according to their education: high education, independent workers (5% of

our sample) are thus the category with the highest score for SRS, while independent workers with little education (2.6%) are as “happy” as the median individual in the sample<sup>10</sup>.

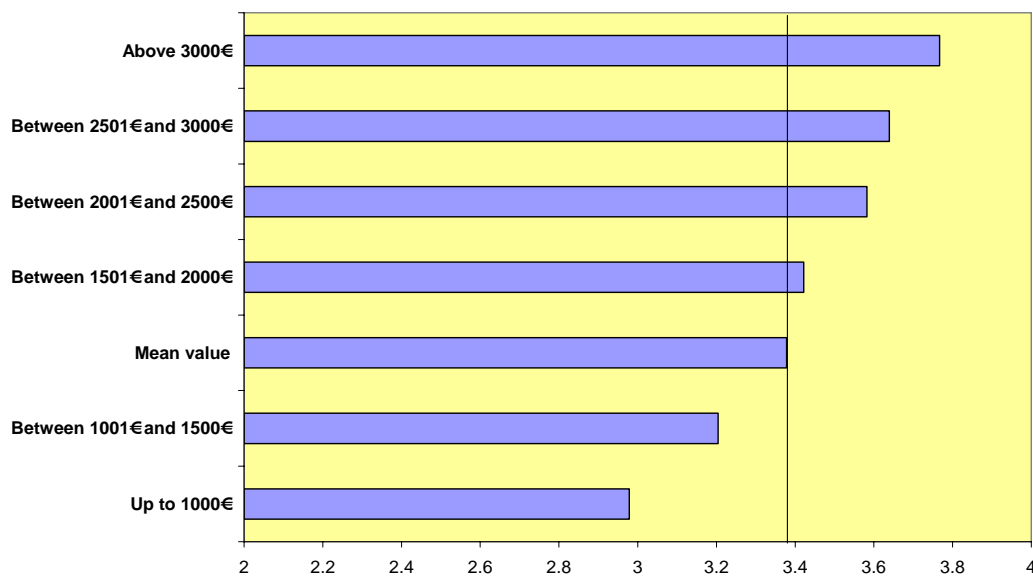
### *Income, expenditure, saving*

While education and working status refer to the respondent, income, consumption and saving refer to the household as a whole.

Monthly income net of taxes is recorded in 22 classes of different amplitude, to decrease the probability of answer denial. However, most respondents choose a class with a round number (1000 euro; 1500 euro; etc.). For this reason we decided to merge classes: results, related to SRS, are reported in the chart in Figure 5.

Figure 5.

SRS by income class

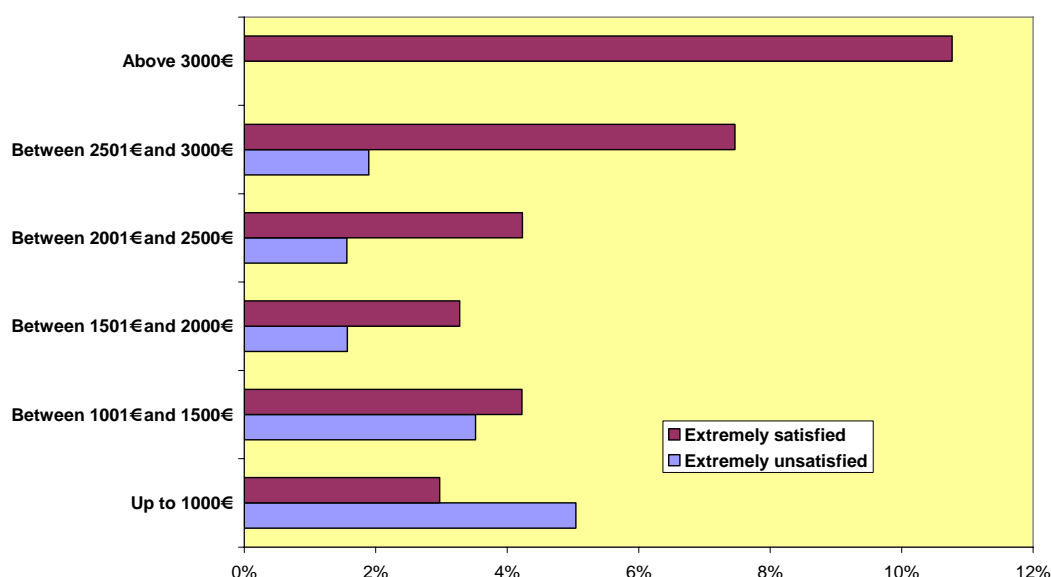


As expected, correlation between SRS and income is robust. However, low income does not preclude life satisfaction entirely. In the chart of Figure 6 we report the share of respondents in each income group whose SRS score is either “Extremely satisfied” or “Extremely dissatisfied”. Nobody in the richest income group dares declare herself “extremely dissatisfied”, but some respondents in the first income group feel “extremely satisfied”, and the share of respondents who are extremely satisfied increases significantly only in the last two income groups, while is rather stable in the first four groups (who account for 85% of our sample).

Income does also depend on the number of income recipients in the household. The largest group in our sample is given by couples with two sources of income (20.6%), followed by singles (12.4%), couples with one income source (12.2%), and couple with 2 kids (12%) or one kid (11.8%) and two sources of income.

<sup>10</sup> A test of their reported happiness against the sample mean is not significant.

Figure 6. "Extremely satisfied" and "Extremely unsatisfied" by income group



A measure of imputed income is given by a question on whether the family owns their home, or if they rent it. As expected, tenants (10% of sample) report a lower SRS with respect to owners. On the other hand, owners with a mortgage (9.6% of sample) unexpectedly report a higher SRS against owners with no mortgage (79.3% of sample).

An additional information on household budget is obtained from a question on saving and borrowing. First of all, the share of people in the sample with negative saving is slightly larger than those with positive saving. Surprisingly, the share of people who is borrowing is rather stable for all income groups, apart from the richest. The distribution of this variable by income groups is reported below in Table 1.

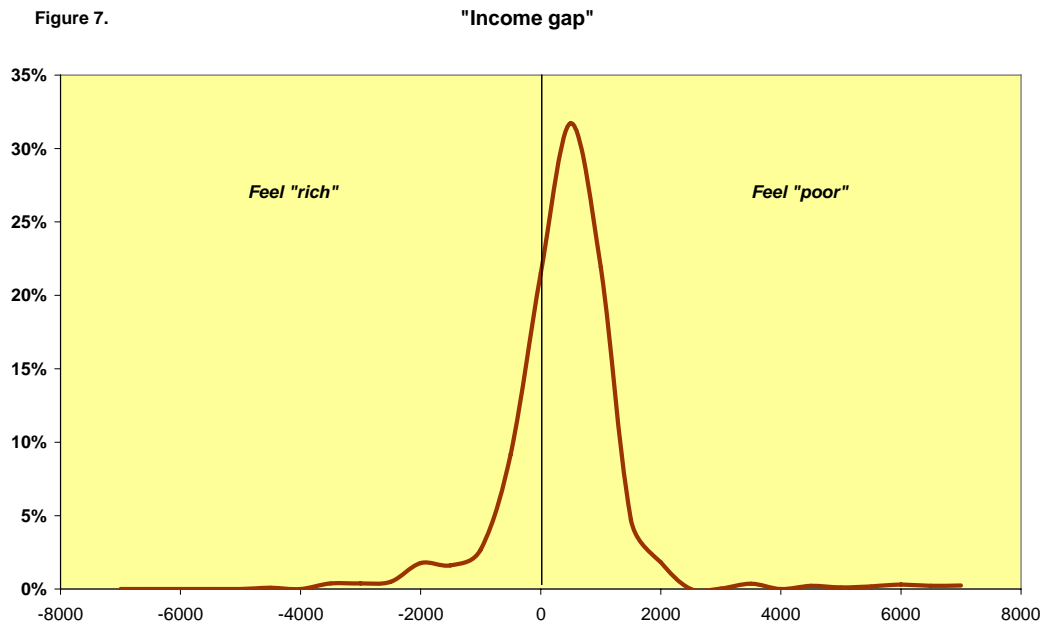
Income group	Financial situation of household					Total
	Borrows	Dissaves	Balance	Little saving	Large saving	
Up to 1000€	4%	23%	68%	5%	0%	100%
Between 1001€ and 1500€	5%	22%	63%	10%	1%	100%
Between 1501€ and 2000€	3%	20%	58%	18%	0%	100%
Between 2001€ and 2500€	4%	10%	61%	25%	0%	100%
Between 2501€ and 3000€	2%	13%	56%	27%	1%	100%
Above 3000€	0%	9%	40%	41%	9%	100%
Total	4%	18%	60%	17%	1%	100%

As expected, saving is positively related to SRS.

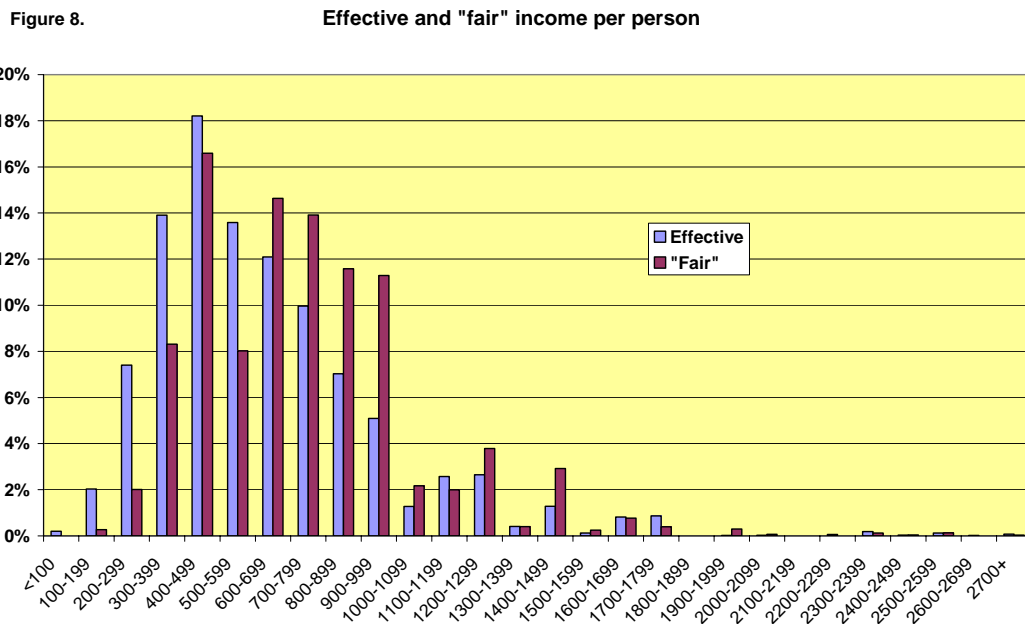
Another question in the survey asks to specify which monthly income would be sufficient, or "fair". The answers are coded with the same income grouping adopted for family income. This allow us to compute an "income gap" variable, which measures the difference between fair income and actual income. To compute such variable, since income classes have different widths, we have taken the median value for each income class<sup>11</sup>, both for actual income and "fair" income, and

<sup>11</sup> And assuming a "reasonable" value for the last income class.

computed the gap. The distribution of this variable, which is not centered around zero as expected, is reported in Figure 7.

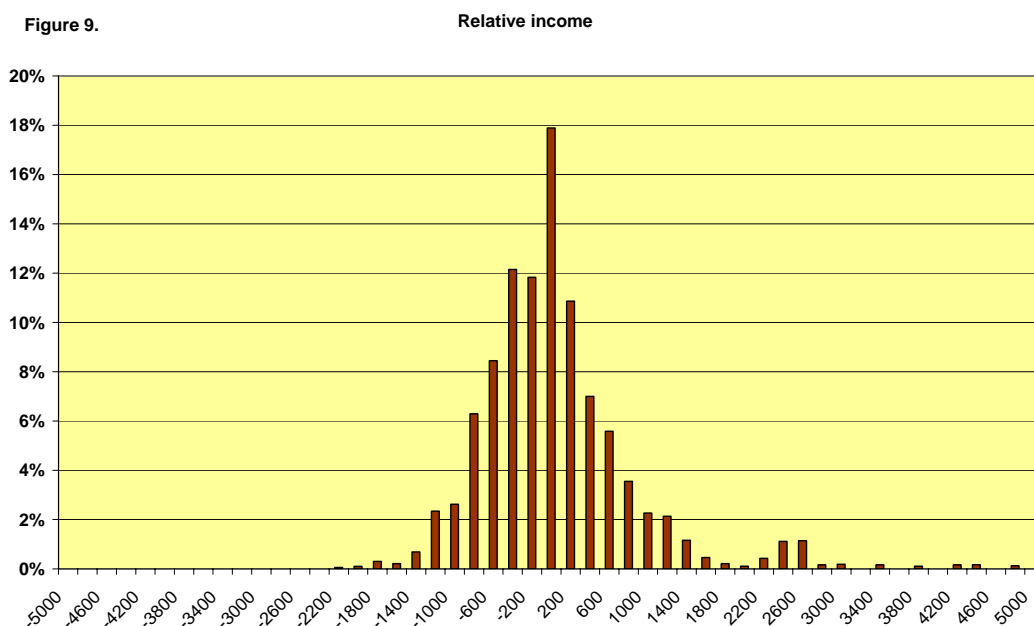


It must be noted that the income level which is perceived as “fair” will depend on family size. In order to take these effects into account we derived a measure of the income gap normalizing both actual and “fair” income by family size. Sample distribution of these two new variables is reported in Figure 8. We estimate the mean value of effective income at €631 per person, and the “fair” value of income at €737 per person.



Yet another measure of interest can be obtained by comparing actual income with the average income of respondents in the same class. We chose to calculate classes according to gender, place of residence (north-south), position at work (divided in 5 groups) and age class. As age is grouped into 7 classes, we computed average income for 140 groups, and obtained a new variable for relative income as the distance between respondent income and the average income in the same

group. The distribution of this variable is reported in the next chart, which shows relative income is normally distributed around zero, as expected.



### *Economic stress*

The survey has a section on whether the family experienced problems related to the affordability of some categories of goods and services, namely (1) food; (2) rent or other expenses related to the house; (3) schooling expenses for children; (4) medical expenses; and (5) monthly payments for network services (water, electricity, gas).

These measures of economic stress are not always specific to poorer families: 8% of households with an income at or above the median reported problems in purchasing food, as did 19% of households with income below the median. 18% of richer families had problems with their monthly payments, against a 27% for poorer families. Medical expenses are less of a problem, but still 12% of richer families report some stress. Expenses related to schools are less of a problem, with only 8% of the whole sample signalling some stress, more concentrated in richer families.

### *Perceptions and expectations*

As discussed above, the main purpose of the ISAE survey is to monitor the sentiment of consumers towards the economic situation of the country as a whole and that of her household. Among other things, the survey asks about perceived inflation in the last 12 months, expected inflation for the next 12 months. Perceptions and expectations about inflations are asked both in qualitative and quantitative terms. A large share of respondents reports that prices have increased a lot (44.7%), somewhat (45.6%) or a little (6%) in the last year, while very few report price stability (3.2%) or a decrease (0.5%).

However, 29.8% of respondents believe *prices* will be stable in the next year, while only 27.6% believe that *inflation* will be stable. Those who believe inflation will accelerate (7.5%), and are therefore pessimists towards the future, are a small minority, while 52.8% believes in lower inflation for the future.

The survey also asks for a specific number for previous and predicted inflation: survey results are hard to reconcile with any theory about expectation formation, and maybe show that most households do not know how to compute inflation and know little about price movements. In fact,

since the quantitative questions have been introduced in the survey (February 2003) the mean value for the past is 25%, with a median value of 20%, which is far above the official figures for both overall inflation and other official inflation measures. On average, households predict inflation at 7% with a median value of zero.

In another question, households are asked to give their expectation on unemployment changes. Again, a large majority (42%) predicts stability, while 34% expect an increase, against 11% who hope in lower unemployment. There is no perception of a trade-off between inflation and unemployment: those who believe in an increase in inflation also point towards an increase in unemployment.

We therefore believe that variables about expected inflation and expected unemployment to be different measures of optimism about the future, although their correlation (0.28) is not very large.

Simple correlation with SRS is, however, quite low, although those who expect an increase in inflation have an SRS score significantly lower than average, and the SRS score increases with optimism about future unemployment.

In another set of questions, respondents are asked about the general situation of the country in the last 12 months and their expectation for the next 12 months. The same questions are asked about their own family. The past looks gloomy, with 47% reporting a marked deterioration, and 35% saying the situation has been slightly worse. As for their own family, only 10% report that the situation has seriously worsened, while 43% report slightly worse conditions (45% believe their situation to be unchanged). Therefore, respondents perception is that things have been bad, but their family has done better than average.

For the future, the share of respondents who expect a further deterioration is much lower at 37%, with 27% expecting a brighter situation. For their own family, 19% expect bad times, while only 9% expect a brighter future. The relation between their family and the economy is thus reversed for the future: respondents do not believe they will benefit from overall better conditions<sup>12</sup>.

As for inflation and unemployment, simple correlation between the SRS score and the expected situation of the family (or the economy) is non significant, but the SRS score is higher among those who expect better conditions for their family. The relation between SRS and expected conditions for the country is dubious.

#### *Income and working time*

The survey investigated, for the first time, on whether respondents, who are active workers, were satisfied with the amount of time dedicated to work, or whether they wanted to increase (decrease) working time, with a proportional increase (decrease) in income. The vast majority of those who answered (65%) were satisfied with their working load. Respondents who would have liked a reduction in working time (and pay) were a mere 5%, with a higher concentration among blue and white collars with a permanent position. Respondents who would like to increase working time and income were 26% of respondents, mostly concentrated among those who have a temporary position. Only 12% of independent workers would like to increase their working load.

As expected, those who are satisfied with their working load also report a higher score on SRS.

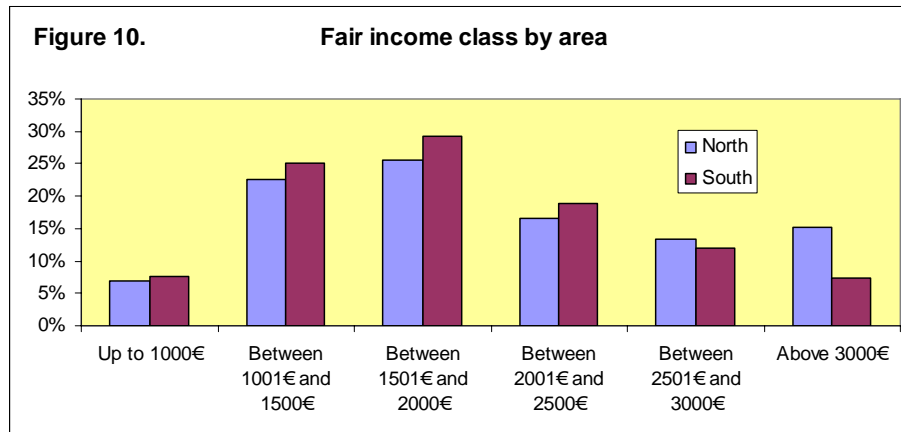
#### *Place of residence*

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<sup>12</sup> The survey was made one month after general elections, where the coalition who was previously in office was defeated by a wide margin. Perceptions on the past and the future may thus be specific for the phase of the electoral cycle, when a newly formed government had presumably a strong consensus, and the previous government was perceived as a failure. This assumption is confirmed by the fact that, in the survey made one month after, the share of optimists about the future dropped significantly.

We kept the analysis of the place of residence for the family last, since - on the one hand - income differences across Italian regions are sensible, and in addition cultural models are not homogeneous.

Household income grows from southern to northern regions, and so does the SRS score. Our sample is not ample enough to proceed with an analysis for each of the 20 Italian regions, and we therefore adopt a simplification, separating the eight southern regions from the others<sup>13</sup>. The distribution of income in the two areas is reported in the following chart (Figure 10), where percentages refer to each sub-sample.



In the North, the majority of households (50.8%) reports two income recipients, and the number of households with more than 4 members is only 6.4%. In the South the majority of households (51%) has one income recipient, and the number of households with more than 4 members is 10.4%. At first sight, therefore, an explanation on why the SRS score is lower in the South is given not only from income, but also by the fact that - for a given income - more people rely on it.

Although some jobs imply the same wage in all regions, the cost of living is considered to be lower in the South. It is therefore interesting to analyze “fair” income by region, as in Figure 10. Here we calculated again the gap between the class of fair income and the class of actual income, so that an “income gap” of -10 means that the respondent believes that a fair income level would be 10 income classes below his own<sup>14</sup>.

As can be seen, both regions feel “poor” in the sense that a large share of respondents perceives their income below the fair level. The number of people feeling “poor” is considerably larger in the South, though, and the number of households who believes their own income to be fair drops considerably from the North to the South.

Finally, people living in small towns or villages (up to 50,000 inhabitants) report a lower SRS than average. People living in larger towns have a higher SRS, but this drops again for cities with more than 500,000 citizens.

### *Extreme values*

The number of extreme SRS scores, e.g. extremely dissatisfied (and extremely satisfied, are relatively few at 3% and 4.4% of our sample, respectively. Since a large share of sample variability is given by extreme values, it is worth examining this sub-portion of our sample in greater detail.

We start from those who report themselves as extremely dissatisfied, although their income class is above the median. These are 17 individuals, or 0.8% of our sample. Most of them live in

<sup>13</sup> Some southern regions have recently reached a GDP per capita which is high enough to drop them out of the EEC definition of “poor” regions. However, for several variables in our sample such regions are not distinguishable from the remaining “poor” southern regions, so we kept them together.

<sup>14</sup> The median income class for fair income is around 2000 € both in the South and the North.



southern regions, in families with three individuals or more, and the respondent is a female classified as “other occupation”, probably housewives. Some other respondents in this group are old people living on a pension. The remaining are either unemployed or looking for their first job, and they are mainly localized in the North. The only individual who does not belong to these categories is a man in his 40s living in a small village in the North, who has a temporary job and would like to work more to increase his income.

Turning now to people who are extremely satisfied although their income is below the median (9 individuals): they are equally split across regions. They all have a low or very low education level. Most of them are old, with a majority of females. None of them is working: they all live on pensions or other transfers.

#### 4. Econometric estimates

This section explores the factors that are associated with self-reported satisfaction in a multivariate setting, by drawing from the variables examined in the previous section. The findings can be thus evaluated comparatively with evidence from other datasets.

Given the scaling of our dependent variable, we start from an Ordered probit estimation, and will verify later how robust our results are to other estimation procedures.

We start from a rather general specification, including all explanatory variables suggested in the literature which are available from our survey, plus additional variables available in the survey.

We prefer to start from a rather general specification to minimize problems with omitted variables. However, a general specification increases the risk of multicollinearity, so we tested some general specifications for coefficients stability with respect to the introduction of a new variable, up to the point when we could reasonably be sure that multicollinearity was not at stake.

Results for our general equation are reported in Table 2 as Equation 1. We have:

##### *Localization*

CITY is a binary variable for households living in cities with more than 500,000 inhabitants, and VILLAGE is a binary variable for cities with less than 50,000 people. The former seems to be negatively related to SRS, thus confirming the finding in the international literature (Dolan et al. 2008), while the latter is negative and not significant, which is an unexpected result instead (see e.g. Scoppa and Ponzio, 2008, for Italy).

Living in one of the southern Italian regions also seems to be inversely related to SRS, although the coefficient is not significant. This result has also been found by Scoppa and Ponzio (2008).

##### *Gender and age*

MALE is a binary variable: female respondents seem to report a higher SRS, which is in line with the finding of the international literature. AGE is the age of respondent divided in classes. We try a non-linear relation between SRS and age, as the literature on happiness suggests (Blanchflower and Oswald, 2008b; Dolan et al. 2008), but it is not confirmed by our sample, perhaps because of the specific age grouping adopted in our sample.

##### *Family type*

NUMPEOPLE is the number of people living in the household, and is never significant in our specifications. ALONE is a binary variable for family of one individual, and is coupled in equation 1 with OLDER, which is a binary variable for respondents aged above 64. The inverse relation between being alone and SRS is not significant in our general equation, but may turn out to be relevant, as discussed below.

COUPLE0KID, COUPLE1KID, COUPLE2KIDS and SINGLEPARENT are binary variables for different family types, as discussed above. We include C2K2INC for couples with two children and two income recipients, and C0KID2INC for couples with no children and two sources of income. None of these binary variables have a significant coefficient in Equation 1, but some will be relevant in other specifications discussed below.

##### *Work status*

UNEMPLOYED, BLUECOLU, BLUECOLUP, FARMER, WHITECOL are binary variables for different working status discussed above. BLUECOLU captures blue-collar, unspecialized workers, while BLUECOLUP is the sub-group with a temporary working contract. WHITECOL captures all white-collars in our sample.

FULLTIME is one for full-time contracts.

TABLE 2. Ordered Probit Estimation of SRS				
	Equation 1	Equation 2	Equation 3	Equation 4
CITY	-0.227848 *			
VILLAGE	-0.011239			
SOUTH	-0.023847			
MALE	-0.294275 °	-0.17083 °	-0.09614	-0.1879 °
AGE	0.021779			
AGE^2	-0.000227			
NUMPEOPLE	0.00162			
ALONE	-0.29427	-0.27403 °	-0.17379 *	-0.2977 *
ALONE*OLDER	0.08361			
COUPLE0KID	0.140432	0.219875 *		0.23359 *
COUPLE1KID	-0.046395			
COUPLE2KIDS	0.213875	0.276897 °	0.301139 °	0.24136 °
C2K2INC	0.061472			
SINGLEPARENT	-0.098886			
C0K2INC	0.170145	0.159153 *	0.24665 °	0.17219 *
UNEMPLOYED	-0.516046 *	-0.77207 °	-0.42715 *	-0.9646 °
BLUECOLU	-0.489662		-0.39049	
BLUECOLUP	0.150661			
BLUECOLSP	-0.436753			
FARMER	-0.187076			
WHITECOL	0.140781	0.210115 °	0.161554 °	0.25856 °
FULLTIME	0.008496		0.1018	
EDUCATION	-0.129842 °	-0.07288	-0.09573 °	-0.0203
HOMEOWNER	0.078742			
SAVE	0.212075 *	0.128832	0.218233 °	0.10141
BORROW	-0.185098 *	-0.18457 °	-0.26072 °	-0.083
INCOME	0.021296	0.016127	0.022629 °	0.01925 °
INCOMEGAP	0.011832			
INCOMEGAP>0	-0.043234	-0.01894		-0.0109
REL_INCOME	-0.000017			
INCHARGE	0.224964 *			
PAST_FAM	-0.085208	-0.10198 *	-----	-0.0965 *
FUTURE_FAM	-0.14008 *	-0.12258 °	-----	-0.1549 °
PAST_ECON	-0.102469 °	-0.0975 °	-----	-0.0927 °
FUTURE_ECON	-0.041076		-----	
PAST_INFL	0.059786	0.11486 °	-----	0.14016 °
FUTURE_INFL	0.013706		-----	
FUTURE_UNEM	0.139437 °	0.117547 °	-----	0.15643 °
EXP_BILLS	0.190535			
EXP_FOOD	-0.303703		-0.25209 °	
EXP_HOME	-0.14136	-0.12664	-0.14714 *	-0.0052
EXP_MED	-0.183321	-0.25869 °	-0.2186 °	-0.3661 °
EXP_SCHOOL	-0.014861			
CHANGE_FOOD	0.170416			
CHANGE_MED	0.037084			
CHANGE_BILLS	-0.079092			
MOREWORK	-0.325344 °	-0.30105 °	-0.28015 °	-0.4116 °
LESSWORK	-0.240209			
R2	0.119462	0.098817	0.084199	n.a.
N	821	1144	1392	1144

### *Education*

Education is coded in decreasing levels, and therefore a negative coefficient implies that as education increases, so does the SRS score. This variable is robust to all of our specifications. This is in line with the results of the international literature, including the case of Italy (Dolan et al. 2008; Scoppa and Ponzo 2008).

### *Income, wealth and relative income*

In Equation 1 we keep the original classification for income, in the INCOME variable. An additional measure of real and financial wealth is given by HOMEOWNER, a binary variable for families who own their home. This variable appears with the expected sign but not significant.

Other financial measures are SAVE for families with positive saving, and BORROW for families which need to borrow. Saving is concentrated in the richest income classes, and is always strongly related to SRS. As we have seen, borrowing occurs in different income classes, and it turns out to be always negatively related to SRS. It may thus be a measure of financial stress, similar to our income gap measure, but also additional, since its significance is controlled for income. This is a notable result, and it is new with respect to the other studies on life satisfaction.

INCOMEGAP measures the difference between the income class perceived as fair and the actual income class. We therefore expect a negative relationship with SRS, and possibly some asymmetric effects, since for people with a negative income gap - who therefore feel “rich” - SRS may be related differently to their income level. We therefore include a second variable INCOMEGAP variable which is relevant only when income is below fair income. For families with a positive income gap, the coefficient is thus given by the sum of the coefficients for these two variables, and it is therefore negative as expected, although not significantly. For people with a negative income gap, the relevant coefficient is that of INCOMEGAP, which is positive and again not significant.

We also include REL\_INCOME, which measures the distance between actual income and average income in the same class, as discussed above. We expect a positive coefficient, if success relative to the same class increases SRS. However the coefficient is not significant.

It turns out that EDU, INCOME, INCOMEGAP and REL\_INCOME are strongly correlated, and therefore a problem of multi-collinearity arises, which may not be easily addressed until we will be able to increase our sample size.

A problem with the coding of our income variable stems from the fact that classes do not have the same width, and therefore the relationship between the class number and income is not linear. We therefore built two new income variables: MINCOME is obtained from the mean income value for each class<sup>15</sup>. The same coding is obtained for “fair” income to obtain a new income gap variable, now labelled MINCOMEGAP, and for relative income, labelled REL\_MINCOME.

Finally, we divided family income by the number of people in the family to have an approximate measure of income per head. This variable is labelled MINCOME<sub>H</sub>, MINCOMEGAP<sub>H</sub> is the corresponding income gap variable and REL\_MINCOME<sub>H</sub> the relative income variable.

### *Other variables for the respondent*

INCHARGE is a binary variable which is one when respondent is “in charge” of the family.

### *Perceptions and expectations*

PAST\_FAM and FUTURE\_FAM report the answers for how the family did last year, and how it is expected to do next year. Replies go from “Improved” to “Worsened” so we expect a negative link between these variables and SRS, as it turns out to be the case in Equation 1.

The same structure applies for PAST\_ECON and FUTURE\_ECON, which report the answers for the whole economy. Again the expected sign is negative.

PAST\_INFL and FUTURE\_INFL are coded in the opposite way, since a value of 1 gives high (past or expected) inflation. We therefore expect a positive link between these variables and SRS.

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<sup>15</sup> For the last income class, which holds only 0.5% of the sample, we chose a plausible value.

Finally, FUTURE\_UNEM codes opinions about unemployment in the coming year, from 1 (increases) to 5 (decreases): we therefore expect a positive link between this variable and SRS.

#### *Income and expenditure*

Our next set of explanatory variables consists in replies to questions about affordability of expenses for monthly bills (EXP\_BILLS), food (EXP\_FOOD), rents and other housing expenses (EXP\_HOME), medical expenses (EXP\_MED) and schooling (EXP\_SCHOOL). These are binary variables coded as one when the family had some problem in affording to keep up with their expenses, and therefore we always expect a negative relationship with SRS.

The survey records if households had to change their habits to cope with rising prices in food (CHANGE\_FOOD), medical expenses (CHANGE\_MED) or monthly bills (CHANGE\_BILLS). These variables may be negatively linked to SRS, if changing habits is simply a signal of economic stress, but may also be positive, if changing habits was a successful strategy. These variables are not significant, anyway.

#### *Working time*

We have two variables to capture those who would like to change their working time, with a proportional change in their labour income: MOREWORK, and LESSWORK. The desire to work more for a proportional increase in income seems to be strongly related, negatively, to SRS, while the other studies on this point do not show a definite result, on balance (Dolan et al. 2008).

Equation 2 is obtained from equation 1 by dropping all variables which are not significant<sup>16</sup>.

All variables in Equation 2 have the expected sign. Surprisingly, education and income are only marginally significant. However, as suggested in the international literature (Dolan et al. 2008), we believe this result to be due to multi-collinearity, as dropping one of the variables implies that the other becomes strongly significant. Other variables become significant, like ALONE, COUPLE0KID, COUPLE2KID, and C0K2INC. This is a new result, because it characterises the family status beyond the usual categories.

An additional problem in our general specification may arise from the lack of exogeneity in some explanatory variables. For instance, SRS is highly significant in an ordered probit regression explaining expectations for the family for next year. We may thus be capturing “optimism” in both SRS and some explanatory variables. If this is the case, a two-stages estimation procedure based on instruments may be appropriate, but our survey lacks enough instrument to proceed.

We therefore estimated our equation 1 again, dropping all variables related to past performance of the economy, inflation and the family, and expectations about the same variables plus unemployment. After repeating our specification search, and dropping non-significant variables, results are displayed as Equation 3.

Comparing equation 3 with equation 2 shows only minor changes, with some variables measuring financial problems becoming more significant. Coefficients are relatively stable, signalling that the exogeneity problem may not be severe in our previous specification in equation 2.

Finally, we verify our results re-estimating equation 2 weighting observations<sup>17</sup>. Results are reported as Equation 4 in Table 2. Comparing the estimates with those in equation 2 we verify that the weighting procedure does not affect the outcome in a dramatic way.

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<sup>16</sup> We choose 20% as the limited point for variable exclusion. A chi-square test for redundant variables confirms that reduction is indeed appropriate.

<sup>17</sup> We did not perform our specification tests using weights since the R software signalled numerical problems in computing standard errors for equation 1.

<b>TABLE 3. Ordered Probit and OLS Estimation of SRS</b>				
	Equation 5	Equation 6	Equation 7	Equation 8
CITY	-0.187452	-0.18072	-0.14343 *	-0.15081 *
MALE	-0.325919 °	-0.31036 °	-0.21072 °	-0.21193 °
ALONE	-0.196851	-0.35804 °	-0.16288	-0.33809 °
COUPLE0KID		0.205289		0.163386 *
COUPLE2KIDS	0.232133 °	0.309899 °	0.154382 °	0.181486 °
COK2INC	0.282769 °	0.137871	0.173223 °	
UNEMPLOYED	-0.779647 °	-0.79787 °	-0.58176 °	-0.65573 °
EDUCATION	-0.141719 °	-0.15112 °	-0.10593 °	-0.10365 °
SAVE	0.1502	0.169287		
BORROW	-0.173383 *	-0.16048	-0.15776 °	-0.16689 °
MINCOME	0.000277 °	-----	0.026195 °	-----
MINCOME <sub>GAP</sub>		-----		-----
MINCOME <sub>GAP</sub> >0		-----	-0.01944 *	-----
REL_MINCOME	-0.000171 *	-----	-0.000069	-----
MINCOME <sub>H</sub>	-----	0.000614 °	-----	0.00058 °
MINCOME <sub>GAP</sub> <sub>H</sub>	-----	-0.00023	-----	
MINCOME <sub>GAP</sub> <sub>H</sub> >0	-----		-----	-0.00023 *
REL_MINCOME <sub>H</sub>	-----	-0.00058 °	-----	-0.00048 °
INCHARGE	0.198696 *	0.18736 *	0.128439 *	0.111567
PAST_FAM	-0.10162 *	-0.12468 °	-0.09495 °	-0.10152 °
FUTURE_FAM	-0.162468 °	-0.1646 °	-0.10152 °	-0.11352 °
PAST_ECON	-0.111877 °	-0.11156 °	-0.09311 °	-0.08273 °
FUTURE_ECON				
PAST_INFL	0.086113	0.100213 *		0.074271 °
FUTURE_INFL				
FUTURE_UNEM	0.142369 °	0.136747 °	0.107074 °	0.109925 °
EXP_HOME	-0.145009	-0.13234	-0.13459 *	
EXP_MED	-0.173203 *	-0.20413 °	-0.17055 °	-0.18484 °
CHANGE_FOOD	-0.128211			
MOREWORK	-0.330289 °	-0.26972 °	-0.2516 °	-0.22159 °
Est. method	Ord.probit	Ord.probit	OLS	OLS
R <sup>2</sup>	0.11019	0.109170	0.246254	0.241263
N	914	904	905	904

Our next exercise involves substituting the variables INCOME, INCOME<sub>GAP</sub> and REL\_INCOME, which are measured with respect to the original distribution of income in classes, with our derived variables MINCOME and MINCOME<sub>H</sub> (see above). In Table 3, equation 5, we report results obtained when measuring income from the average class value, after dropping all variables which are below the chosen level of significance. Comparing results with equation 2 reveals little differences between the two specifications.

In equation 6 we estimate our model again, this time using our derived measure of income per person. Again, there are little changes. Relative income is now significant, with the “wrong” sign.

In equations 7 and 8 in Table 3 we estimate equations 2 and 6, respectively, using OLS, in order to obtain coefficients which are easier to interpret. In both cases we repeat the whole specification search, finding that the same variables to be significant.

## 5. Conclusions

This paper is exploratory in character. Recently, Italy has emerged as an interesting and unfortunate case, since it ranks badly in life satisfaction score with respect to percapita income, according to the Eurobarometer survey. However, Italy is also little studied as a specific case, and

extensive data are not available on this problem.<sup>18</sup> Therefore, this paper attacks this problem by adapting in May 2008 the ISAE survey on Italian households' budget and individual sentiments on economic conditions to the specific question on life satisfaction.

The usual 'happiness equation' where life satisfaction is regressed against income and socio-demographic controls has been taken as the benchmark, while the role of other variables on the households' budget and individuals' perceptions are specifically studied.

The ISAE survey is especially detailed in the questions on the family structure and on the work type. It is interesting to note that, in the benchmark equation, the most satisfied family is the one formed by a couple with two children, irrespective of income sources, while, unexpectedly, the couple with two income sources and no children ranks second. This result suggests that an alternative "happy" family structure with respect to the classic one seems to emerge.

The second interesting result regards the rank in life satisfaction according to the work type. The descriptive statistics show the expected rank, from the temporary unskilled bluecollar, through permanent unskilled bluecollar, temporary whitecollar, up to highly educated independent worker. In the controlled results, whitecollars appear significantly more satisfied with life with respect to bluecollars over and above the fact that whitecollars are usually richer than bluecollars. This result suggests that the status has a premium per se, or that whitecollars are advantaged in job satisfaction. The latter interpretation is in line with the results found in the literature on job satisfaction (Depedri and Pugno 2009).

The other results from the benchmark equation confirm those found in the economic literature on happiness. Especially important appear unemployment and education, less so appear age and gender, but with the expected sign. Security of the job is not significant, probably because the sample is too small. Living in the South of Italy does not emerge as a fortunate arrangement.

Before passing to commenting the income and budget variables, the result on the work-leisure trade-off should be mentioned. A number of interviewed individuals would prefer to both work more and earn more, but it is surprising how much this is significant for life satisfaction, having controlled for income.

The role of perception of economic conditions has been here mainly investigated through the variable which measures the gap between what has been called 'fair' income and actual income. This variable may capture the *perceived* relative income. Descriptive statistics show that average 'fair' income is greater than average actual income, thus suggesting a net depressive effect on life satisfaction. Some estimations qualify this evidence, since they show the depressive effect on SRS only when income is below fair income.

Perceived changes of the households' economic conditions in the last 12 months also emerge as significant and with the expected sign. This result is consistent with Easterlin's (2001) hypothesis, according to which the comparison of past income with the present plays a negative role in life satisfaction.

The economic conditions are captured by various variables in our estimates: actual income, house ownership, perceived relative income, past income changes, but also affordability of expenses for monthly bills. Some of these variables emerge as significant, despite other expected proxies for income, like education, work status, work type, preference for both work and earnings. This is surprising, but it is even more surprising that no big changes in significance and coefficients follows the inclusion of another economic variable: borrowing.

The impact of the borrowing variable is substantial, significant and robust to alternative specifications of the estimates. Also the impact of the saving variable is substantial and with

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<sup>18</sup> The only specific studies are, to our knowledge, Scoppa and Ponzo (2008), and Ferrante (2009), who use the recent wave of the data-set of the Bank of Italy.

expected sign, but the estimate is not robust. Therefore, financial wealth may be more important than income, but borrowing appears to add life unsatisfaction to poverty.

The main suggested interpretation of these results is that the Italian households are financially stressed. Per capita income is clearly not a sufficient indicator of their economic conditions. However, further investigation is needed in order to ascertain the underlying reasons for this stress. Households' budget can be negatively shocked by unexpected external events, like drops in income growth and security. But another possible reason for the financial stress may be due to the mismanagement of the budget, like the pursue of status consumption over and above households' economic conditions.



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## APPENDIX. Variable codes

AGE	Age of respondent (mean value for each class)
ALONE	Binary, = 1 if respondent lives alone
BLUECOLSP	Binary, = 1 if respondent is a blue collar, specialized, with temporary job contract
BLUECOLU	Binary, = 1 if respondent is a blue collar, non specialized
BLUECOLUP	Binary, = 1 if respondent is a blue collar, non specialized, with temporary job contract
BORROW	Binary, = 1 if household has to borrow
CITY	Binary, = 1 if household is in a city with more than 500,000 inhabitants
C0K2INC	Binary, = 1 if household is composed by a couple with no kids and two sources of income
C2K2INC	Binary, = 1 if household is composed by a couple with two kids and two sources of income
CHANGE_BILLS	Binary, = 1 if household changed habits to meet bills-related expenses
CHANGE_FOOD	Binary, = 1 if household changed habits to meet food-related expenses
CHANGE_MED	Binary, = 1 if household changed habits to meet medical-related expenses
COUPLE0KID	Binary, = 1 if household is composed by a couple with no kids
COUPLE1KID	Binary, = 1 if household is composed by a couple with one kid
COUPLE2KIDS	Binary, = 1 if household is composed by a couple with two kids
BLUECOLUP	Binary, = 1 if respondent is a farmer
EDUCATION	Level of education, from 1 (degree) to 5 (primary)
EXP_BILLS	Binary, = 1 if household reports problems in paying monthly bills
EXP_FOOD	Binary, = 1 if household reports problems in buying food
EXP_HOME	Binary, = 1 if household reports problems in meeting house-related expenses
EXP_MED	Binary, = 1 if household reports problems in medical-related expenses
EXP_SCHOOL	Binary, = 1 if household reports problems in meeting schooling-related expenses
FULLTIME	Binary, = 1 if respondent works full time
FUTURE_ECON	Perceptions on how well the economy will do in the next 12 months, from 1 (will improve) to 5 (will worsen)
FUTURE_FAM	Perceptions on how well the family will do in the next 12 months, from 1 (will improve) to 5 (will worsen)
FUTURE_INFL	Perceptions on how prices will change in the next 12 months, from 1 (will increase) to 5 (will drop)
FUTURE_UNEM	Perceptions on how unemployment will change in the next 12 months, from 1 (will increase) to 5 (will drop)
HOMEOWNER	Binary, = 1 if household owns their home

INCHARGE	Binary, = 1 if respondent is the head of the household
INCOME	Income of household, in classes
INCOMEGAP	Difference between household income and income perceived to be “fair”
LESSWORK	Binary, = 1 if respondent would prefer to work less for a reduction in her income
MALE	Gender of respondents: = 1 if male
MINCOME	Median value for each income class
MINCOMEGAP	Gap between the median value for each income class, and the respective value calculated from perceived “fair” income
MINCOMEGAPH	Gap between the median value for each income class, divided by the number of persons in the household, and the respective value calculated from perceived “fair” income
MINCOMEH	Median value for each income class, divided by the number of persons in the household
MOREWORK	Binary, = 1 if respondent would prefer to work more, for an increase in her income
NUMPERS	Number of persons in the household
OLDER	Binary, = 1 if respondent’s age is above 64
PAST_ECON	Perceptions on how well the economy did in the past 12 months, from 1 (greatly improved) to 5 (greatly deteriorated)
PAST_FAM	Perceptions on how well the family did in the past 12 months, from 1 (greatly improved) to 5 (greatly deteriorated)
PAST_INFL	Perceptions on how prices changed in the past 12 months, from 1 (increased a lot) to 5 (dropped a lot)
REL_INCOME	Difference between household income and average income of a reference group, based on gender, place of residence, position at work and age class, where income is given by its class
REL_MINCOME	Difference between household income and average income of a reference group, based on gender, place of residence, position at work and age class, where income is given by the median value of income class
REL_MINCOMEH	As REL_MINCOME; where income is divided by the number of persons in the household
SAVE	Binary, = 1 if household is able to save on current income
SINGLEPARENT	Binary, = 1 if household is composed by a single parent with one or more kids
SOUTH	Binary, = 1 if household is located in one of the eight southern regions
SRS	Self-Reported Satisfaction, increasing from 1 (extremely dissatisfied) to 5 (extremely satisfied)
UNEMPLOYED	Binary, = 1 if respondent is unemployed
VILLAGE	Binary, = 1 if household is in a city with less than 50,000 inhabitants
WHITECOL	Binary, = 1 if respondent is a white collar

